Commonwealth of Kentucky
Division for Air Quality

COMMENTS AND RESPONSE

ON THE DRAFT PERMIT

TITLE V/Synthetic Minor PERMIT NO. V-05-050 R2
ELECTRO CYCLE, INC.
MADISONVILLE, KY
November 20, 2008
HOSSEIN RAKHSHAN, REVIEWER

SOURCE I.D. #:	21-107-00121
SOURCE A.I. #:	1880
ACTIVITY #:	APE20080001

SOURCE DESCRIPTION:

Electro Cycle, Inc. is a secondary aluminum alloy ingots production plant. The source is located in Madisonville, KY and produces alloy ingots for the metal casting industry. The source melts and alloys a variety of recycled aluminum products to produce these ingots. The transforming of recycled aluminum scrap into alloy ingot at the source is a four-step process. These steps are: scrap receiving, scrap shredding, delacquering kiln (kiln) processing and induction furnace melting.

The source melts several types of scrap in the induction furnace. These include industrial scrap from can manufacturers that arrives densified either in a bale or a briquette. The source also processes loose extrusion turnings, wheel turnings and can process scrap forms, i.e. extrusion scrap, wheels, etc. Dealer scrap is the only scrap material fed into the kiln that contains the contaminants required for D/F formation. Most material used to make up the charge to the induction furnace is in the form of densified bales or briquettes. This material must be processed further, before it is ready to charge into the induction furnace. This processing begins at the #1 mill (Mac/Saturn-low speed-high torque mill) with 3 100 HP motors in tandem that drive the 2 hydraulic motors. The scrap is conveyed up and into the #2 mill (American Pulverizer-300 HP ring mill) for further sizing. Ferrous scrap is then removed magnetically and the milled scrap is conveyed to the kiln where the organic coatings are thermally removed and passed into the afterburner for ultimate destruction. The afterburner oxidizes the unburned hydrocarbon vapors in the gas stream that is vented from the kiln. The source uses an electrically operated induction furnace to provide the thermal energy to melt the aluminum scrap. The induction furnace has a capacity of 7 tons. Material is charged from the kiln to the induction furnace and the molten metal is poured into sow molds for solidification.

The particulate, acid gas and D/F emissions from the kiln are controlled by a baghouse that uses lime and activated carbon coated bags for additional acid gas and D/F control. The manufacturer specified particulate control efficiency is 99.3% and the afterburner control efficiency is 99.7% for hydrocarbon destruction. The kiln has a rated burner capacity of 6.4 mmBTU/hr and the afterburner has a rated capacity of 4.2 mmBTU/hr. The material exit temperature from the kiln is 750-850 ˚F and the gas temperature going to the afterburner is 250˚F. The afterburner has an operating temperature of 1400-1450˚F and an exit temperature of 313˚F. The afterburner must operate at a temperature greater than 1400˚F to destroy organic compounds. The induction furnace is also equipped with a bag house for particulate control with manufacturer specified control efficiency of 99.3%.

The potential to emit (as defined in 401 KAR 52:001, Section 1 (56)) of any single HAP is less than ten (10) tons per year and the combination of HAPs is less than twenty-five (25) tons per year.

Therefore, the source is not a major source of HAPs . However, the provisions *40 CFR 63, Subpart RRR, National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production*, are applicable to area sources that have the potential to produce dioxin/furan (D/F) compounds.

Pursuant to 40 CFR Part 63.1500 (c), the requirements of 40 CFR 63, Subpart RRR, pertaining to dioxin and furan (D/F) emissions and associated operating, monitoring, reporting and recordkeeping requirements apply to the delacquering kiln and induction furnace. As such, the applicable final rule requirements of 40 CFR Part 63, Subpart RRR, promulgated on December 30, 2002, are incorporated into this permit.

When the source applied for the Title V permit, their original annual capacity was 25000 tpy, however during the ongoing review of the Title V permit the source has requested to increase this capacity to 35000 tpy. This change was considered as a source modification and based on the emission calculations, the total PM from the modification was determined to be 16.68 tpy. In this source's case PM is considered equal to PM10, therefore PTE of PM10 greater than 15 tpy entailed the PSD review (i.e. 15 tpy significant emissions threshold). The source requested PM10 to be limited to less than 100 tons per year (90 TPY) source wide to make this source a minor source and get the modification exempted from PSD review.

The potential to emit (as defined in 401 KAR 52:001, Section 1 (56)) of PM10 and VOC is greater than one hundred (100) tons per year. Therefore, the source is a major source and is subject to the provisions of 401 KAR 52:020. The Source is Synthetic Minor for PM/PM10.

PUBLIC AND AFFECTED STATE REVIEW:

Affected state (Indiana) was notified of the issuance of the draft permit on July 01, 2008 via e-mail. Public notice was placed in the Messenger in Madisonville, Kentucky on July 29, 2008. The comment period ended 30 days from the date of publication. Three comments received from the Electro Cycle on August 6, 2008. A public hearing was requested and advertised on September 12, 2008 in the Madisonville Messenger. The hearing was held on October 17, 2008 in the Fiscal Courtroom of the Hopkins County Government Center at 56 North Main Street, Madisonville, Ky. Comments were received during the hearing. No changes were made to the permit as a result of the public hearing comments received. Minor changes were made to the permit as a result of the comments received from the source; however, in no case were any emissions standards, or any monitoring, recordkeeping or reporting requirements relaxed. The following is a detailed explanation of changes made to the permit and supporting documents. The U.S. EPA has 45-days to comment on this proposed permit.

COMMENTS AND RESPONSE:

The following comments from the source were submitted to the Division in a letter dated August 6, 2008.

Title V Permit:

Item 1: On page 5, Applicable Regulations, 1. Operating Limits, i):

"No painted aluminum scrap (other than beverage cans) shall be processed at this

plant without written approval from the Division. [Permit Number O-93-006, Condition 8, issued on December 1, 1992]"
As detailed in the "Statement of Basis to Permit No. V-05-050-R2" dated June 23, 2008, Previous Permitting Actions, page 4 of 6, item C:
During this permit review, the permittee requested to remove the condition limiting the amount of coated aluminum scrap (Permit # O-93-006, Condition 10). The 40 CFR 63, Subpart RRR, test protocol submitted to the Division for Air Quality prior to the testing set the conditions under which the testing would be conducted, including coated scrap rates of much higher than 40 %. This testing demonstrated compliance with all applicable emission limitations at the higher coated aluminum scrap rate requested in letter dated February 14, 2004, with measured emissions far below the applicable standards. Due to this compliance demonstration, **the facility has performed the compliance demonstration necessary to have this limit removed from the permit. Therefore, this condition is not included in the permit.**

Division's response: The Division concurs with the comment and has revised the permit as suggested by the source.

Item 2: **On page 5, Applicable Regulations, 1. Operating Limits, l):**

"Afterburner and the baghouse shall operate at all time to preclude the requirements of 401 KAR 51:017, Prevention of Significant Deterioration for VOC and PM/PM10."

Please revise to read:

"Afterburner and the baghouse shall operate during all production times to preclude the requirements of 401 KAR 51:017, Prevention of Significant Deterioration for VOC and PM/PM10."

Division's response: The Division concurs with the comment and has revised the permit as suggested by the source. However, the VOC annual limit of 90 TPY is removed from the draft permit as it is found to be redundant requirement.

Item 3: **On page 7, Applicable Regulations, 3. Testing Requirements, a):**

"Within 180 days of the issuance of this permit, the permittee shall perform stack testing for the delacquering kiln and shall involve testing of particulate and D/F emissions. The stack test shall demonstrate compliance with the applicable D/F emission limit listed in Emission Limitations 2.c."
As an area source for HAPs, Electro Cycle is subject to 40 CFR 63 Subpart RRR, and as such, is subject only to the D/F emissions limit under the MACT. Additionally, the facility is subject to mass emission limitations and opacity in accordance with 401 KAR 59:010. However, mass emission limit and opacity limits are easily met with the application of 99.9% baghouse control efficiency. Furthermore, the baghouse system is equipped with continuous monitoring systems to measure bag break occurrences. Therefore, Electro Cycle plans to retest for D/F but is requesting a waiver from the requirement to retest for particulate.

Division's response: The Division concurs with the comment and has revised the permit as suggested by the source.

Public Hearing Comments:

Comment #1:

> MR. CARTER: My name is Henry Carter. I live off Tucker Scotts Road directly across from the plant. I do not like it, do not want it enlarged. You can't breathe out there sometimes. My wife and kids complain about it's noisy at night, can't sleep, and on the weekends, their pollution problem is real bad; it's real bad. I've had it bad enough at my house the shrubs has gotten gray dusted powder on it, and I don't want it because I don't think it can be healthy. Thank you.

Division's response: The Division has looked back to the last 5 years records for this source and has found no complaints about the odor or dust logged in with the Division for this facility. According to the Owensboro Region Field Office inspector, during the last two years inspection of this source, mild odor was noticed on their property, which is believed to come from aluminum cans that have sugary liquid in them. There was also some issue with the inside of facility being smoky, but no emission was escaping the building and no opacity violation was noted.

The source intends to use the state of the art technology by installing a new Delacquering Kiln and upgrade their entire control system to an integrated PLC (Project Logic Control) system that will monitor and control process operation automatically.

Electro Cycle will also install some water sprays to cool the gases from afterburner prior going in the baghouse and thus reducing the volume of gases going in the baghouse. The proposed modifications outlined in this permit application would allow for additional ventilation and control of the interior shredder complex. However, the facility has stated that no such connections will be completed until a separate permit determination is completed and the necessary permitting is enacted.

The Division concludes that the combination of all these engineering changes will have a positive impact not only for Electro Cycle, but for all of their neighbors, as well. The permit will be issued as conditioned. If you notice any problems in the future, please notify the Owensboro Region Field Office at (270) 687-7304 immediately. They will inspect the facility for possible violations.

Public Hearing Comment #2:

> MR. PREDDARD: My name is Mark Preddard and I'm President of Power Supply. We've been in the industrial park since February of 1988. We were there probably about a year or so before Electro Cycle moved in. Like I said in my letter, Electro Cycle is a good neighbor. I would hope that they could fix their issues, but we've had 20 years of aluminum dust, 20 years of smell, especially on cloudy, overcast days.
> I've had discussions with some of the guys there before. I never really could get a clear cut answer of anything, just that that's just the way it is sometimes. If they can fix it, it's great, but I'm not so sure that -- you know, you've got to vote yes before they can even try it. And I hope that they can fix it, but I really don't think that they can. I'm not an engineer by any means. I couldn't tell you if that works or not. I just

know that, you know, they've had several fire runs out there where they nearly burnt the place down several times. I realize accidents happen and you're dealing with a lot of high heat, and aluminum dust is flammable. But I'm just going from experience that my employees have had health concerns from the smell, and at times we've had aluminum dust—just real fine aluminum dust—on vehicles and shrubs and things that I hope that it can be repaired, but as a neighbor and business owner, I can't support it at this time.

Division's response: See the response for comment # 1

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.